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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,746	10/01/2004	Jerome K. Hastings	ETC7455.066	5745
27060	7590	03/29/2006	EXAMINER	
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (EATON)			NGUYEN, VINH P	
14135 NORTH CEDARBURG ROAD			ART UNIT	
MEQUON, WI 53097			PAPER NUMBER	
			2829	

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/711,746

Applicant(s)

HASTINGS ET AL.

Examiner

VINH P. NGUYEN

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13, 17-18, 20-35, 38-39 is/are pending in the application.
- 4a) Of the above claim(s) 1-13, 17, 18, 20, 24-28, 32-35, 38 and 39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-23 is/are rejected.
- 7) ☒ Claim(s) 29-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1004,0505</u>   | 6) <input type="checkbox"/> Other: _____                                    |

1. Applicant's election with traverse of species of figure 5 in the reply filed on 01/26/06 is acknowledged. The traversal is on the ground(s) that figure 4 and figure 7 are improperly qualified as different species. This is not found persuasive because the apparatus of figures 4 or 7 does not disclose a printed circuit board includes two fingers for mounting the hall effect sensors and a conductive path includes at least one spiraled portion configured to encircle at least a portion of the pc board. Therefore, the species of figure 5 is different from the species of figures 4 and 7. Furthermore, the species of figure 7 includes a housing configured to position the first and second hall effect sensors about the conductor, this feature is not found in the elected species of figure 5. Therefore, species of figure 7 is different from species of figures 4 and 5.

The requirement is still deemed proper and is therefore made FINAL.

2. It appears that claims 21-23 read on elected species
3. Claims 1-20,24-28 and 32-39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 01/26/06.
4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
5. The abstract of the disclosure is objected to because legal phraseology such as "the present invention" is used.. Correction is required. See MPEP § 608.01(b).

6. Claims 21-23,29-31 are objected to because of the following informalities:

In claim 21, it is unclear what “a spiraled portion” is. Is it shown in elected species of figure 5?

In claim 30, it is unclear what “an input terminal” and “an output terminal” represent. Are they shown in any of drawings?

The dependent claims not specifically address share the same indefiniteness as they depend from Objected base claims.

Appropriate correction is required.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 21,29 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Wan et al (Pat # 6,984,978).

As to claims 21 and 31, Wan et al disclose a current measurement apparatus as shown in figure 3 having a conductive path (48) disposed proximate to a printed circuit board (PW**B**), a first and second Hall effect sensors ((10) configured to be mounted to the PC board (see column

6, lines 16-39) and adjacent the conductive path to provide feedback indicating a current flow through the conductive path, a processing component (58,62,66,70,74,76) configured to receive the feedback from the first and second hall effect sensors. It appears that the conductive path includes at least a conductor with at least one spiraled portion encircle at least a portion of the PC board (aperture or opening). It appears that the processing component is also used to calculate an anti-differential output from the feedback that substantially remove feedback in response to magnetic flux induced externally from the conductive path.

As to claim 29, it appears that Wan et al show a communication interface (76) configure to output a current signal indicative of current flow through the conductive path .

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wan et al (Pat # 6,984,978).

As to claim 22, Wan et al disclose a current measurement apparatus as shown in figure 3. Wan et al do not disclose a printed circuit board includes a first and second arms for mounting the first and second Hall effect sensors. However, in figure 4, Wan et al teach that a housing having first and second arms (84,86) for receiving the first and second Hall effect sensors (10). It

would have been obvious for one of ordinary skill in the art to provide first and second two arms as taught in figure 4 to the device of figure 3 so that the first and second hall effect sensors are secured properly on the board in order to perform the current measurement accurately

As to claim 23, it appears that the first and second arms would include air gaps for receiving the first and second sensors.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dubhashi et al (Pat # 6,819,095) disclose power semiconductor device assembly with integrated current sensing and control.

Haensgen et al (pat # 6,348,800) disclose multi-phase ground fault current sensor system.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH P. NGUYEN whose telephone number is 571-272-1964. The examiner can normally be reached on 6:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



VINH P NGUYEN

Primary Examiner

Art Unit 2829

03/27/06